

COVER CROP (340) SPECIFICATIONS

Cover Crops (340) shall be planned and installed in accordance with the NRCS Standard detailed in the Field Office Technical Guide (FOTG)-Section IV-Conservation Practices. This document provides additional parameters, recommendations, and requirements for developing site – specific plans for this practice.

Cover Crops are crops which are not usually grown for harvest, but which serve multiple functions in crop rotation systems. Cover crops are typically grown to prevent soil erosion or for improvement of soil health, however, other important roles include the enhancement of soil structure, improvement of soil fertility, enhancement or preservation of environmental quality, and in the management of weeds, insect pests, and plant pathogens.

Producers often want to achieve more than one purpose with this practice. It is important to select the best species, or species mixture, to achieve the intended purpose(s) or primary use. Generally, no single cover crop species is ideal for all purposes.

Table 1 - Common Cover Crops Recommended for Planting in Minnesota; and Table 2 - Identification and Comparison of Performance and Goals for Each Species are lists of commonly used cover crop species in Minnesota, including information about the cover crop suitability for each purpose, plant growth characteristics and seeding recommendations. Evaluation of a producer's intentions, site specific conditions, and resources concerns are essential for selecting the species best suited to achieve the intended purpose(s). Consult the [Midwest Cover Crops Council website](#) and their [Cover Crop Decision Tool](#) for cover crops suitable to Minnesota and your planning needs. Table 1 and Table 2 are not an all-inclusive list, since any crop could be considered a cover crop. When planning/designing a cropping system with a cover crop that is not listed, it is required that an NRCS Area Resource Conservationist and/or State Agronomist is consulted for species suitability.

Seedbed Preparation

Prepare a suitable seedbed adequate for the species to be planted and method of planting. This may vary from conventional planting to no till. If seeding the cover crop prior to harvest of the primary crop, no seedbed preparation is needed. A firm weed-free seedbed is desirable to ensure accurate seed placement and good seed-soil contact at the proper depth to facilitate germination and stand success.

Seeding Method

If seeding the cover crop prior to harvest of the primary crop, options may include broadcast at the same time or immediately following the last row crop cultivation; apply using high clearance machinery; or aerial seed into the growing crop later in the growing season.

If seeding after the harvest of the primary crop, in the fall or prior to the planting of the next crop in the spring, the cover crop may be drilled, broadcast or aerial seeded and incorporated with light, shallow tillage to cover the seed.

Rate and Date of Seeding

To produce maximum growth, fall seeded cover crops should be planted prior to harvest or just as soon as possible after crop harvest if practicable within seeding dates of the species to be planted. Spring seeded cover crops can be seeded as early as possible depending on the primary crop to be planted. See Table 1 and Figure 1 for seeding rates and dates. All recommendations are based on the Midwest Cover Crop Council Decision Tool. For single species use 100% of the seeding rate. For multi-species mixtures, the seeding rate is recommended to be increase to 120% for the entire mixture.

Planning Considerations

Utilize cover crops to enhance crop diversity by adding crop types which are missing in the cash crop rotation (cool-season grass, cool-season broadleaf, warm-season grass, warm-season broadleaf)

Inspect field conditions for multiple years of crop residue on the soil surface (an indicator of imbalance in the Carbon-Nitrogen ratio). Plant residue with a lower C:N ratio will break down faster than plant residue with a high C:N ratio.

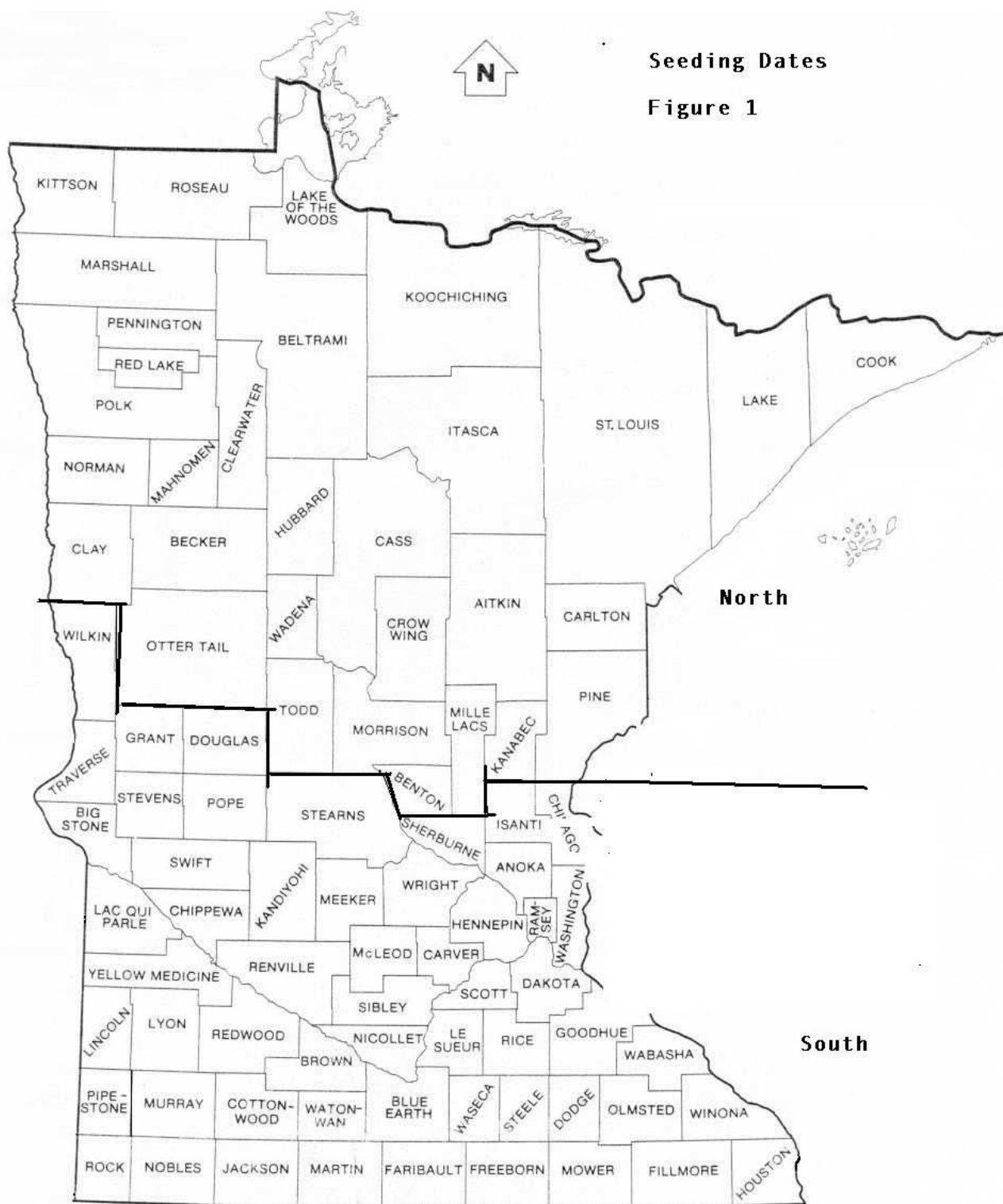
- Check for tillage-induced, restrictive (compaction) layers in the soil (use a tile spade to find crop roots growing horizontally above the compacted layer)
- Utilize cover crops in a manner that provides sufficient ground cover to prevent erosion
- Consider potential use of cover crops by wildlife for food or shelter
- Take into consideration the use of cover crops for pollinators
- Consider potential herbicide restrictions and planting rotation intervals

NRCS will not recommend buckwheat in conservation plantings in areas in rotation with or adjacent to commodity wheat production that will be planted to wheat within the next 2 years after planting buckwheat because of the potential for buckwheat seed to contaminate the wheat crop, and the health risks that potentially poses. “Adjacent” is designated as within 30 feet of a wheat field. The use of buckwheat must be excluded from cover crop plantings or pollinator plantings in rotation or adjacent to fields with wheat production or abstain from growing wheat as a commodity for 2 calendar years after planting buckwheat. The use of buckwheat in conservation plantings in Minnesota is still permitted in fields or areas that are not used for commodity wheat production.

Termination

During the cover crop planning process, determine how and when the cover crop will be terminated. Consider the planting dates and growth habits of the crop that will follow when selecting a cover crop and the method of termination, such as frost, mowing, tillage, roller crimpers, and herbicides. Cover crops should be terminated as late as feasible to maximize plant growth and soil protection, but there is some risk in waiting too long, because a vigorously growing cover crop can deplete soil moisture, negatively affecting the following crop. A period of 7-14 days between termination and planting is usually sufficient if there is rainfall to replenish the seed zone and hasten decomposition of the cover crop residue. The exception would be if planting a cover crop to control wind erosion on the emerging cash crop.

Termination of the cover crop in this case usually occurs after the fourth to fifth leaf stage or when the cash crop is not susceptible to wind erosion. For additional information see NRCS Cover Crop Termination Guidelines—Non-Irrigated Cropland fact sheet.



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